

ABSTRACT

A stent graft includes a tubular prosthetic graft, a support structure expandable between contracted and enlarged conditions, and a biosensor attached thereto. The biosensor may be directly attached to an outer surface of the graft, to struts defining the support structure, or by one or more filaments configured to dispose the biosensor beyond an outer surface of the stent graft. When the biosensor is attached by one or more filaments, the stent graft is mounted in a contracted profile on a delivery apparatus with the biosensor disposed adjacent to the stent graft thereon. The stent graft is introduced into a blood vessel in the contracted profile, and advanced endolumenally until it is positioned across an aneurysm. The stent graft is expanded towards an enlarged profile such that ends of the stent graft engage healthy regions of the vessel adjacent to the aneurysm, thereby isolating the aneurysm from the rest of the vessel with the biosensor disposed within the aneurysmal sac, the biosensor allowing remote monitoring of pressure or other conditions to detect an endoleak or excessive pressure therein.